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## APPENDIX.

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### *Examination of Dr Carpenter's Claim of Priority as to the Discovery of the Law of Unconscious Cerebral Action.*

In the fifth edition of his *Principles of Human Physiology* (1855), Dr Carpenter expounds the doctrine taught in this work of unconscious vital action of the brain, as the organ of thought. He shows that "much of our highest mental activity is to be regarded as the expression of the *automatic* action of the cerebrum;" and that it "may act upon impressions transmitted to it, and may elaborate results such as we might have attained by the purposive direction of our minds to the subject, *without any consciousness* on our parts" (p. 607). "Looking," he adds, "at all those automatic operations by which results are evolved without any intentional direction of the mind to them, in the light of 'reflex' actions of the cerebrum, there is no more difficulty in comprehending that such reflex actions may proceed without our knowledge, so as to evolve *intellectual products* when their results are transmitted to the sensorium and are thus impressed on our consciousness, than there is in understanding that impressions may excite muscular movements through the reflex power of the spinal cord, without the necessary intervention of Sensation." He (Dr Carpenter) shows how his doctrine can be made to explain the etiology of the remarkable mental states induced by mesmerie, electro-biological, and similar processes, and how it elucidates the nature of delirium, somnambulism, insanity, and the like. He has designated this class of operations by the term "unconscious cerebration" (p. 609); and for all these views he sets up a formal claim of priority in the preface to this fifth edition of his *Human Physiology*.

This general law of cerebral action is, if true, of such fundamental importance to mental science, that, if the claim thus set up be at all credible, Dr Laycock has done Dr Carpenter great

injustice in not giving it the fullest recognition in this work. Unfortunately, the claim is wholly unfounded ; for the law was discovered and applied by Dr Laycock to mental physiology and pathology more than twenty years ago, under the term "reflex function of the brain," and twelve years before Dr Carpenter knew anything of it whatever. "Unconscious cerebration" is in fact only another phrase to designate reflex cerebral function.

It is necessary to state, however, that while Dr Carpenter has thus elaborated physiological doctrines identical with those of Dr Laycock in general principles and in details, he has commingled with them certain other theories of his own, for which Dr Laycock's doctrines are in no degree responsible. In these peculiar theories, the organic mechanism or organology is the main object of consideration, especially as to the so-called "sensory-motor" structures and functions ; and the great principles of mental philosophy have little or no share. Now, although Dr Laycock has never expressly developed his method of inquiry, he has always followed that which is evolved in these pages, and which rests upon philosophy alone.

It will be seen from this, that the difference between Dr Carpenter and Dr Laycock as to principles is fundamental. The former believes, or believed, in the distinctness of "mind" and "vital principle;" his doctrines, therefore, are necessarily mechanico-vital ;—the latter reduces mind and the vital principle to unity ; his doctrines, therefore, are necessarily teleological. Consequently, while undertaking to show that Dr Carpenter's claim has no foundation in fact, Dr Laycock thinks it advisable to indicate the origin and modes of development of his doctrines.

In the year 1837, much interest was excited in London and elsewhere by the results of mesmeric manipulations upon two girls named O'Key, patients in University College Hospital. Various opinions were expressed by physiologists at that time as to the nature of these mental "mesmeric" phenomena. By the great majority they were looked upon as simply fraudulent ; by a few they were thought to be manifestations of hysteria. Dr Laycock was at that time attached to the York County Hospital, and, after careful inquiry and experimental research, he came to the conclusion that they constituted a group of functional diseases of the encephalon, artificially induced ; and that hysterical girls or women were the most susceptible of them. Desiring to solve the true nature of these states, he was led step

by step to a special investigation of the phenomena of hysteria, and of the diseases of the nervous system of women generally, and which was conducted both clinically and systematically. The results of these inquiries were sent to the editor of the *Edinburgh Medical and Surgical Journal* in 1837 and 1838, and published in it in 1838, 1839. Conjointly, these papers are equal to an octavo volume of more than 200 closely printed pages.

In these essays, Dr Laycock grouped together, as to cause, the phenomena of religious epidemics and "revivals,"\* those of "imitation,"† those of mesmerism, and those resulting from various similar causes in different parts of the world.‡ Thus the doctrines and its applications, of which Dr Carpenter claimed merit in 1855, were fully stated and developed by Dr Laycock in 1838.

Nor was this all. It had been observed how much of fraud and falsehood was mixed up with the mesmeric experiments ; and as to this point, Dr Laycock demonstrated the influence of the generative glands in exciting impulsive and moral insanity, by developing the automatic action of the cerebrum. By the aid of comparative psychology, he showed the ovarian origin of hysterical cunning, insane fire-raising and theft, infanticide, pica, &c.§ Again ; at this time the whole pathology of insanity was in the most confused state ; some physicians even doubting whether the brain was concerned in the disease or not. Dr Laycock demonstrated the influence of morbid blood on the brain in developing insanity, and thus established the humoral pathology of the disease, as a disease of the nervous system, on a scientific and practical basis. Further, Dr M. Hall was contending that the law of responsive and adapted action to external stimuli, according to the teleological *lex nostri conservatio*, was limited to the true spinal system, to the exclusion of all parts of the encephalon above the *tubercula quadrigemina* ; but Dr Laycock, by

\* Cases quoted from Wesley's Journal, and references to Hecker and others ; *Edin. Med. and Surg. Jour.*, April 1838, p. 457.

† *Ibid.* p. 450.

‡ "The Pythian priestess, the wizards of Kamtschatka, the whirling dervises of India, the serpent-eaters of Egypt, the second-sight men of the Highlands, the 'wise men' (*μαγοι*) and prophets who still may be found in Yorkshire, and the O'Keys, are all of the same family—all knowing how to excite convulsions, or delirium, or spectral illusions and somnambulism, in themselves or their dupes, by mental acts or drugs." (*Ibid.* July 1839, p. 25.)

§ *Edin. Med. and Surg. Jour.*, No. 136, July 1838.

demonstrating the morbifive influencee of colours in induing spasmodic diseases and morbid appetites, showed that the cerebral nerves proper, or nerves of special sense, were also exectors.\*

It is quite true that exception may now be taken to various minor details of neurological anatomy eontained in Dr Layeoek's early papers, for that has made great progress since their date ; but the general principles then developed, and their applications then shown, have only been confirmed by every recent discovery in mental physiology. To understand the difficulties he had to encounter in the investigation, regard must be had to the then incomplete condition of metaphysies as well as of neurology, and the entire want of any satisfactory explanation of the relations of the cerebral functions to Thought. No one has more strongly shown these than Dr Carpenter himself ; for at the same moment that Dr Laycock was working out his views of the automatic action of the hemispheres, and its analogy in health and disease to the automatic action of the spinal cord and sympathetic ganglia, Dr Carpenter was engaged upon the first edition of his first work on Physiology. It was published in 1839, at the moment when Dr Laycock complected the first publication of his doctrines, and contained a statment of Dr Carpenter's entire ignorance of mental dynamics, or of the method which Dr Laycock had followed in investigating them.†

Now, at this time Dr Carpenter had already published his views on the functions of the nervous system in relation to instinctive and voluntary aetions,‡ in which his principal object was to distinguish betwen muscular movements effected with and without sensation, as a development of Dr M. Hall's views ;

\* *Edin. Med. and Surg. Jour.*, No. 137, Oct. 1838, p. 349.

† "The complexity of the operations of the *mind*, and the impossibility of deriving from the study of the lower animals any assistance which can be relied upon in their analogies, have hitherto been a complete bar to the successful investigation of them as portions of the nervous system. It is yet quite uncertain how far mental aets are dependent on or connected with any changes in its condition ; and we only know that they can neither be excited in the first place, nor effect any change upon the material structure of the body, except through its intervention."—*Principles of General and Comparative Physiology*, &c., by Wm. B. Carpenter, Member of the Royal College of Surgeons of London, &c. (Lond. 1839), p. 454.

‡ "On the Voluntary and Instinctive Actions of Living Beings," *Edin. Med. and Surg. Jour.*, No. 132, July 1837.

to whom and to Dr John Reid he owed his fundamental ideas.\*

Dr Carpenter was a follower of Professor Alison, who attributed both the reflex acts and the instinctive actions of lower animals and of man to sensation. While, however, he retained a portion of the Alisonian doctrine, and admitted a class of sensational instincts, he pointed out that there was also a non sensational class. He showed that certain instinctive acts are due to an impression without sensation (the doctrine of reflex action), and to an impression with sensation, as suggested to him by Dr John Reid. These, however, were both old doctrines, and were not, in fact, made clearer by Dr Carpenter; for he was still under the influence of the Cartesian hypothesis, then all-dominant, as to the identity of consciousness and mind as an agent; so that he made the simple passive state of consciousness of an impression the cause of vital changes.† With such notions, derived from the Cartesian school, as to the causal activity of mere passive states of the consciousness, any clear ideas as to the relations of the brain to thought were simply impossible. Hence the declaration of Dr Carpenter, that cerebral physiology, in its relations to the mental operations, was to him a complete blank. Now, Dr Carpenter has never escaped from this fundamental fallacy; so that in even this latest development of his doctrines he still adheres to the Cartesian notions, and so mixes them up with the doctrine of automatic vital action, that his psychological expositions have the appearance of a motley patchwork of incongruous views.

The German physiologists, being to a certain extent followers of Leibnitz, were less backward than the English in mental physiology. Hence Müller had already clearly developed, in

\* "There has been much controversy amongst physiologists as to the classification of those muscles which, being called into play in the living body by the stimulus of nervous power alone, are more or less under the control of the will. My friend, *Dr John Reid*, has suggested to me, that the difficulty may be overcome by regarding every muscle in the body which is supplied by motor nerves as equally susceptible of stimulation from two different sources—namely, volition, and sensation without volition." (*Op. cit.*, p. 31.)

† "The consciousness of an impression is an act of sensation; and here the purely mental functions commence."—Art. by Dr Carpenter in *Br. and For. Med. Review*, April 1838, in which he re-states the views contained in the paper just referred to.

1838, many of the doctrines which Dr Carpenter had only arrived at as novelties in 1853. But even he was partly under the influence of the Cartesian doctrines as to the nature of consciousness. At this time, no one taught in England the Liebnitzian principles except Sir William Hamilton, who first expounded them in his courses of lectures in the University of Edinburgh, which he began in 1836-7.\*

In 1840 Dr Laycock published his *Treatise on the Nervous Diseases of Women*. It was a second edition of his papers on Hysteria, and contained a re-statement of the greater portion of the doctrines they contained. Dr Carpenter reviewed the physiological portion of this work.† It is not surprising that, with his preconceived notions, he could not comprehend Dr Laycock's doctrines, and that, in particular, the chapter‡ which set forth in substance the fundamental correlations of the physical, vital, and mental forces (see *ante*, vol. i. p. 269), was wholly unintelligible to the critic. Of this chapter Dr Carpenter observes, "There is a good deal of vague and pointless allusion to the doctrines taught in the ancient schools of philosophy, mixed up with speculations respecting the molecular actions of matter, which do not seem to lead to any definite end. In fact, we are at a loss to know what our author himself had in view."§ The doctrines as to the influence of voluntary and involuntary *attention*, as a cause of morbid cerebral and mental states, were also imperfectly comprehended and stated. And no reference whatever was made to the *involuntary* acts of attention which are so largely influential in developing mesmerism and similar phenomena. In like manner, the scope of the chapter headed "The Instinctive Actions in Relation to Consciousness—the Brain subject to the Laws of Reflex Action," was wholly overlooked.

The new doctrines which Dr Laycock had developed and applied to pathology having excited little or no attention (mainly, it is probable, in consequence of this adverse criticism in so highly influential a journal), he thought it right, in 1844, to bring them, in a more physiological form, before the medical section of the British Association for the Advancement of Science,

\* See vol. i. chap. v. of this work.

† *Brit. and For. Med. Review*, July 1841.

‡ "Some Points in the Metaphysics and Physiology of the Nervous System considered," p. 86.

§ *Brit. and For. Med. Review*, July 1841, p. 66.

which met that year in York. This paper was published in the *British and Foreign Medical Review* for January 1845.\* To Dr Laycock's surprise, Dr Carpenter, on reading the paper, hinted a charge of plagiarism against him, for he could see in these views nothing more than an exposition of his own; inasmuch as he considered that to have pointed out the immediate dependence of the class of movements upon sensation, was in effect the same thing as Dr Laycock's law of reflex action.

The publicity thus given to Dr Laycock's doctrines attracted attention to them. Amongst others, the late Mr George Combe applied them to an explanation of the involuntary acts and gestures which characterize the instincts and sentiments. He had corresponded with Dr John Reid as to some points of the anatomy of the brain; and that able physiologist had incidentally expressed the opinion that Dr Laycock's views were erroneous, since it was well understood that the phenomena he attributed to an unconscious functional activity were dependent on sensation. This was precisely the doctrine advocated by Dr Carpenter at Dr Reid's suggestion. Dr Laycock therefore took the opportunity of showing to Mr Combe in what respects his law of reflex action differed from the sensational law, and Dr Reid controverted in his turn Dr Laycock's views. This correspondence was published.†

In that correspondence Dr Laycock further developed his views, and expressly stated, what in fact had been all along the fundamental idea of his doctrines, that all these vital phenomena, whether reaching the consciousness or not, were due to the operation of a general law of design. After illustrating the law of differentiation or evolution of the *lex nostri conservatio*, from the simplest functions upwards, Dr Laycock stated the general teleological conclusion which necessarily followed from the premises.‡ In the same letter, Dr Laycock indicated the

\* *On the Reflex Function of the Brain.*

† "Correspondence between George Combe, Esq., Professor Reid, and Dr Laycock, on the Reflex Anatomy and Physiology of the Brain;" the *Lancet* (1845), vol. ii.

‡ "Now the plain and obvious conclusion from all these facts must be stated, however startling. It is this:—*the development, conservation, and reproduction of all organisms, are regulated by an unerring law of design—a law as generally applicable to living matter as the law of gravity to universal matter.* This law must be our guide in ascertaining the relations of the reflex, instinctive, emotional, and voluntary movements" (*Lancet*, vol. ii. (1845), p. 256).

law of reflex nutrition and development as the cause of physiognomical characteristics ; of particular types of animals ; and of the changes which species undergo, first into varieties, then through these into new species.\* Dr Laycock premised these statements by the remark, that what he had previously set forth were fragments of a system he was building up, and that he kept back much of his views because he did not wish to develop it prematurely and imperfectly.

In the following year Dr Carpenter published an able paper "On the Brain and its Physiology," in the form of a critique upon a phrenological work by Dr Noble. In this essay Dr Carpenter gave a more definite form to his doctrine of causal sensations, extending it upwards to the hemispheres, through the so-called sensory ganglia. But so far from developing the doctrine of unconscious cerebral action, he showed that all ideas, to be active, must be associated with sensations or feelings of pleasure or pain, and that these have their seat in the same central axis as the corporeal sensations which he alleged are the causes of the instinctive acts.† On this occasion Dr Carpenter avoided all mention whatever of Dr Laycock's views ; yet the paper contained internal evidence that he had read the correspondence just published in the *Lancet*.

In the *British and Foreign Medical Review* for July 1847, Dr Laycock gave a critical review of Unzer's *Erste Gründe einer Physiologie*, a remarkable work on the functions of the nervous system which he had disinterred from the mass of German literature of the last century. This review attracted so much attention, that the Council of the Sydenham Society requested Dr Laycock to translate the original treatise into English, and also a work by Prochaska on the same subject. Dr Laycock's translations were published in 1851.

In 1848 Dr Carpenter became editor of the *British and Foreign Medico-Chirurgical Review*, which was virtually a continuation of Dr Forbes' journal. The views of Unzer and Prochaska had a favourable influence on mental physiology ; in particular, they materially modified the opinions of Dr Carpenter, who now repudiated the distinct excito-motory system of Dr M. Hall. Accordingly the January number of the Review for 1850 opened with a paper from his pen, in which he expressed his

\* *Lancet*, vol. ii. (1845), p. 258.

† *Brit. and For. Med. Review*, Oct. 1846, p. 516.

more advanced views. It is mainly devoted to a further development of the sensori-motor doctrines, but contains no trace whatever of any knowledge of the reflex functions of the brain. In this respect, the old theories are worked up anew.

In the following year (January 1851), Dr Laycock contributed to the Review a neurological article (No. XII.), in the form of a notice of recent works on diseases of the nervous system. Thinking this a convenient opportunity for once more bringing his cerebral doctrines before the profession, Dr Laycock gave a summary of them, and showed their applicability to the phenomena of sleep, and to pathological states involving the thoughts and will—especially delirium, somnambulism, cestasy, reverie, catalepsy, &c. To his great regret, Dr Carpenter suppressed, without consultation with him, the whole of that portion of the article which was devoted to his special subject, leaving only an editorial reference to the doctrines of a complimentary character—a hint that they required “amendment”—one or two vague illustrations—and a general summary.\* The explanation Dr Carpenter gave for this suppression of Dr Laycock’s views was, that they were inconsistent with those expressed in his own article of January 1850, and trenced too closely upon his own subject. As this was the first time that Dr Carpenter had recognised any difference between Dr Laycock’s doctrines and his own, it follows that he had certainly had them before him for ten years (*i.e.*, since 1841), without understanding their bearing. At this time Dr Laycock contributed essays to the *Journal of Psychological Medicine*, in which he applied his doctrines to mental physiology and pathology,† so that he was in a position to be indifferent to Dr Carpenter’s censorship.

During this time mesmeric phenomena had never ceased to attract the attention of physiologists and physicists. The publication in Germany, in 1845, of Von Reichenbach’s researches on

\* “Dr Laycock refers the phenomena of dreaming, spectral and other illusions, the *deliria* of mania and insanity, and the peculiar condition termed somnambulism, to the same head; but we must, for the present, content ourselves with this mention of his views.” (Dr Carpenter in *Brit. and For. Med.-Chir. Rev.* (as editor), vol. vii. p. 205.)

† Especially in the articles “On Sleep, Dreaming, and Insanity,” *Journal of Psychological Medicine*, October 1851; “On some of the Latent Causes of Insanity,” April 1854; and on “The Psychology of Monomaniacal Societies and Literature,” July 1854.

the "Od Force," and the accession of Miss Martineau, the late Professor Gregory, and others, to the ranks of the believers in the mystic hypotheses of mesmerism, developed the mesmeric movement anew; and it continually extended in various ways during the subsequent years, until it culminated in electro-biology, table-turning, and spirit-rapping. The first to develop at this time the causes and nature of these morbid mental states on a scientific basis was Mr Braid. This gentleman, in 1842, and again in 1844-1845,\* not only proved experimentally what Dr Laycock had demonstrated in 1838—namely, the influence of the corporeal and mental states known as *attention* on the development of these artificially induced diseases of the brain,—but also the extent to which vital changes might be induced thereby, in the functional activity of other organs;—a doctrine already expounded by Sir Henry Holland;† and by Dr Elliotson and Müller, as to the exaltation of ordinary sensations (see *ante*, vol. ii., 841).

The years 1850 and 1851 were fertile in mesmeric and electro-biological literature. Edinburgh and Glasgow, in particular, being the seat of much excitement on the subject, important works on both sides of the question emanated from Edinburgh.‡ It was doubtless these phenomena, and the discussions regarding them, which at last opened Dr Carpenter's eyes as to the true meaning of Dr Laycock's doctrines of the reflex function of the brain. Accordingly, in 1851, he invited Dr Laycock to contribute to the Review an essay on the general subject, which was accordingly written.§ While in this essay the physiology and pathology of attention and suggestion were developed by Dr Laycock, according to the principles he had held since he

\* *Medical Times*, Dec. 1844, Jan. and Feb. 1845.

† *Medical Notes and Reflections*. 1839.

‡ Amongst others, Dr Alexander Wood wrote a pamphlet on the subject; his general conclusions on this occasion, in regard to the anatomical relations of the phenomena examined, fully anticipated what Dr Carpenter taught in the following year. Thus his eighth and last conclusion runs, "That the cerebral hemispheres can excite the cord to motion independently of the other centres; hence, ideas in the mind may produce motion independently of volition" (p. 28). And in the conclusions in which he differed from Dr Carpenter, the weight of argument is on Dr Wood's side.

§ "Odyle, Mesmerism, and Electro-Biology, &c," *Brit. and For Med.-Chir. Review*, Oct. 1851.

first directed his inquiries to mesmeric phenomena in 1837, he did not omit reference to his views of the close relation between these phenomena and that automatic action which he maintained to be the functional law of the cerebral centres.\*

The metropolis did not escape the mesmeric mania, and Dr Carpenter, like others, was busy, while this essay was being written, seeking for an explanation of the facts, which could no longer be denied on the ground of fraud. Starting from his own theories as to excito-motor and "sensori-motor" phenomena, and reflecting on the dominant influence of ideas in mesmeric and other states over the movements of the individual, lately demonstrated by Mr Braid, he denominated all actions so produced "ideo-motor." Seeing how purely automatic they were in their character, and looking about for a general principle to explain this, he now, confessedly for the *first time*, recognised the true meaning of Dr Laycock's doctrine of a reflex function of the cerebrum, considered as the seat of ideas, and as the legitimate expression of the class of movements to which he gave the name of "ideo-motor;" and acknowledged that Dr Laycock had made a real and important advance in carrying out the doctrine of reflex action to that organ. When, therefore, Dr Carpenter delivered a lecture on the subject to the Royal Institution of Great Britain,† his task was an easy one. He had, on the one hand, to apply the doctrines of causation, taught most fully by Sir H. Holland, Mr Braid, Dr Wood, and others, as well as by Dr Laycock; and,

\* "One great fact proper to all is, that the action of the will and of consciousness is suspended, and the encephalic ganglia partially or wholly placed in the condition of the 'true spinal' or reflex system. Dr Alexander Wood refers to this principle in his explanation of the phenomena, and quotes a case adduced by Dr Laycock in proof of his doctrine of cerebral reflex action" (*op. cit.*, p. 425). Again: "As in the system of spinal reflex actions there are the class termed *centric*, so also there are *cerebral* reflex acts of centric origin. These are best seen in cases of *impulsive insanity*, in which a person is hurried by an internal impulse, which he can neither account for nor control, to do various insane acts. Now, a condition exactly analogous is excited in persons affected electro-biologically; the difference is only in the mode in which the impulsive idea is produced. In the one, it is the result of functional disease; in the other, it is suggested to a mind in which the brain is in the condition we have already considered," &c. (*Ibid.*, p. 426.)

† *On the Influence of Suggestion in Modifying and Directing Muscular Movements independently of Volition*; Friday, March 12, 1852.

on the other, the principles of cerebral dynamics, as propounded by Dr Laycock exclusively,—and his explanation was complete. This in fact, was substantially the course Dr Carpenter took, dwelling mainly upon "Suggestion" as a cause. Consequently, there is not one original idea developed in his paper. The only thing new is the one phrase *ideo-motor*, which, as applied by him to reflex cerebral phenomena, simply means motive. Yet, in some way or other, the public became possessed with the notion, that the whole of the doctrines he taught originated with him—a notion into which Dr Carpenter himself finally lapsed. It does not appear from the printed abstract of the lecture whether Dr Carpenter referred to any other researches than those of Mr Braid; there is a vague and curt acknowledgment of Dr Laycock's priority as to the "reflex" function, but in a foot-note, a circumstance sufficiently showing that the reference to Dr Laycock was no part of the spoken matter.\*

The number of the *Medico-Chirurgical Review* which contained Dr Laycock's article on Mesmerism had not been published more than a few weeks, when Dr Carpenter informed him that he was preparing a contribution to the *Quarterly Review* upon the same subject. In writing to Dr Laycock as to the reception his article had met with, he asked him how far he had worked out the idea that all the actions of sleep-walkers, somnambulists, hypnotists, electro-biologists, came under the laws of reflex cerebral action, as he intended to refer to his (Dr Laycock's) researches in his forthcoming article in that Review. The information was supplied as requested.

The article thus announced in 1851 by Dr Carpenter, as in preparation for the *Quarterly Review*, did not appear until September 1853, when Dr Laycock's review of Dr Carpenter's chapter on the Functions of the Nervous System had already been published.† The titles of the works which Dr Laycock had noticed in his article of July 1851 headed Dr Carpenter's

\* The printed words are—"The *cerebrum* is universally admitted to be the portion of the nervous system which is instrumentally concerned in the formation of ideas, the excitement of the emotions, and the operations of the intellect; and there seems no reason why it should be exempted from the law of 'reflex action,' which applies to every other part of the nervous system." The foot-note appended to this passage says—"To Dr Laycock is due the credit of first extending the doctrine of reflex action to the brain."

† *Medico-Chir. Review*, July 1853.

article, with the addition of his own *Principles of Human Physiology*, Sir H. Holland's *Chapters on Mental Physiology*, and three or four brochures on Table-turning and Spirit-rapping.\* There is no reference whatever in this essay to Dr Laycock's views; but, in an attempt to explain certain phenomena of "table-talking," contained in a foot-note (p. 555), the writer (being Dr Carpenter himself) remarks,—“This is only an hypothesis, but it will be found to be in strict conformity with the physiological views *put forth by Dr Carpenter* as to “the unconscious action of the cerebrum”—i.e., put forth in his recently published “*Principles*.” Dr Carpenter, in explaining this remarkable omission from the article of all reference to Dr Laycock's views, stated that it originally recognised Dr Laycock's services as intended, but that, contrary to his wishes, the editor of the *Quarterly Review* suppressed that portion of the MS.

In the spring of 1852 Dr Carpenter had informed Dr Laycock that he was at work upon this new edition (the fourth) of his *Principles of Human Physiology*, and was elaborating the psychology of it upon the basis of Dr Laycock's law of the reflex function of the brain, having avowedly adopted the idea. Under these circumstances, when, in April 1852, Dr Laycock had the pleasure to receive Dr Carpenter as a guest into his house at York, he afforded Dr Carpenter every facility for the comprehension of his views, both in daily conversation and by placing upon Dr Carpenter's writing-table copies of his papers on the subject.

This fourth edition of the *Principles of Human Physiology* was published in December 1852. The psychology consisted of an expansion of the doctrines contained in the paper read at the Royal Institution in March of the same year; but it also had the same vague character as to the sources from whence the author had drawn his facts and doctrines, and the same covert claim to originality. There was, however, a foot-note in the body of the work which made special reference to one of Dr Laycock's papers, and one only; but no notice of his essay published in October 1851, nor of any of his earlier papers.† This

\* “Electro-Biology and Mesmerism,” *Quar. Review*, vol. xciii. p. 80.

† “The application of the doctrine of ‘Reflex Action’ to the Brain was first fully developed by Dr Laycock of York, in a paper on the Reflex Function of the Brain, read before the medical section of the British Association, at its meeting in York, Sept. 1844, and afterwards published in the *British and Foreign Medical*

acknowledgment, doubtful as it is in meaning and extent, recognised only a small portion of Dr Laycock's doctrines, and was rendered still more doubtful by a claim to priority, as to even that fragment, which Dr Carpenter set up in the *preface* to his work.\*

Dr Carpenter's belief, thus expressed, as to his own originality in the matter, was doubtless sincere, but it was wholly delusive. In January 1850 he had confessedly no conception whatever of these modes of action of the cerebrum, either in normal or abnormal mental states. It was only in the following year that he recognised, for the first time, Dr Laycock's doctrine of cerebral reflex action, while suppressing an exposition of it in the journal of which he was the sole editor. Now, in the same years (1850, 1851), a vast stride was being made in both the observation of

*Review*, vol. xix. Not having recognised what appears to the author the essential distinction, both in their anatomical and physiologeal relations, between the sensory ganglia and the cerebrum, or hemispherical ganglia, Dr Laycock did not mark out the distinction between the 'sensori-motor,' or 'consensual actions,' which are the manifestations of the reflex power of the former, and the 'ideo-motor' actions, whielh depend upon the reflex action of the latter. But, in adopting that part of it which is strictly applicable to the cerebrum, and in applying it to those various states which agree in the common characteristic of the existencce of mental activity without volitional control, the author considers that he is merely giving greater definiteness and a wider application to Dr Laycock's doctrine" (p. 799, foot-note).

\* "The peculiar states which are known under the descriptions of somnambulism, hypnotism, mesmerism, eleetro-biology, &c. are all considered in their relations to sleep on the one hand, and to the ordinary eondition of mental activity on the other; and the author ventures to believe that he has not only succeeded in throwing considerable light upon the nature of those aberrant forms of physieal action, but that he has been enabled to deduce from their phenomena some inferences of great importance in psychological scienee. He would particularly refer to that portion of section 5 which relates to the *automatic* operations of the mind, and to the relation of the will to those, as opening up what he believes to be an entirely new line of inquiry. It is with great satisfaction that he can refer to his friends Dr Holland and Dr Laycock as partieipating (with regard to all essential points at least) in his own views on all these subjects; and though all whielh he has here written upon them *is the expression of the results of his own observation and reflection*, yet he gladly takes this opportunity of acknowledging the great benefit whielh he has derived from the writings and conversation of these philosophical and independent thinkers" (p. 13).

the phenomena he refers to, and in the explanation of them according to physiological laws ; and Dr Laycock had not only summarised the results of the inquiry in July 1851, at Dr Carpenter's particular request, but at the close of 1850 had put Dr Carpenter in a position to know his views as to the automatic action of the brain in delirium, somnambulism, insanity, &c., in transmitting them to him for publication in the *Med.-Chir. Review*. These remarks refer to Dr Laycock's researches only, but it must always be remembered that Sir Henry Holland, Mr Braid, Dr Alexander Wood, and others, had already preceded Dr Carpenter in the inquiry, and that their views were in fact familiar to him ; so that the doctrines which he claimed as the result of his own observation and reflection were really the results of the observation and reflection of others, already published, and of which he must have had a full knowledge.

Dr Laycock was exceedingly reluctant to interrupt the cordial relations existing between Dr Carpenter and him, by reclaimsing against the claim of priority Dr Carpenter had set up. It was very satisfactory to him to find that at last his doctrines had found recognition, however imperfect, in so important a volume as the "*Principles* :" with all its faults, the exposition of them was a lucid and satisfactory explanation of many points in mental physiology, as compared with the useless doctrines current ; and he was not without a hope that Dr Carpenter would discover he was mistaken in his claim to originality. Besides, all the more important metaphysical questions connected with Dr Laycock's principles (of which Dr Carpenter manifestly knew nothing) had yet to be brought into correlation with physiological laws (as has been attempted in this work) ; so that it seemed to him to be unnecessary to make any formal reclamation. He therefore took the opportunity of simply affirming his own doctrines,\* without special reference to Dr Carpenter's claim to priority, with the conviction that Dr Carpenter's sense of justice would lead him right. Dr Carpenter saw this statement, and understood its import ; but, unfortunately, he was already fully possessed by the idea that he was not only the discoverer of the entire doctrine of unconscious cerebral action, but was also the first to apply it to mental physiology and pathology. He therefore, in the spring of 1855, not only again put forth an unqualified claim to priority in the

\* *Jour. of Psychol. Medicine*, Oct. 1854.

preface to the *fifth* edition of his *Principles of Human Physiology*, but omitted, at the same time, that acknowledgment of the assistance he had derived from Dr Laycock inserted in the preface to his fourth edition. Under these circumstances, Dr Laycock thought it necessary to at once call Dr Carpenter's special attention, through a mutual friend, to the unfounded and unjust character of his claim. On this occasion Dr Laycock made no reference whatever to the numerous opportunities, both private and public, which he had afforded Dr Carpenter for becoming acquainted with his views during the previous ten years, but restricted the terms of his reclamation to the *Essay on the Reflex Function of the Brain*, published in 1845; the only one quoted by Dr Carpenter himself. Dr Carpenter received the reclamation in the same friendly spirit with which it was made; and, after a due consideration of facts, professed himself convinced that Dr Laycock's claim to priority was well founded, although he felt that he had arrived at his conclusions by a process of independent thinking. He therefore fully acknowledged, that not only the doctrine of cerebral unconscious (or reflex) action was due to Dr Laycock (which he had already fully conceded), but also its applications to insanity, dreaming, delirium, somnambulism, hypnotism, electro-biology, reverie, &c.; and in accordance with these convictions, he expressed, in a written communication, his intention to withdraw the claim of having been the first to formalize the doctrines, in the next edition of his work.

Five years have now elapsed since the expression of that intention, but no new edition of Dr Carpenter's valuable work has been called for, and no withdrawal of the claim has been made; so that during the whole of that period Dr Carpenter (so far as Dr Laycock knows) has allowed himself to be considered as the discoverer of this important law of cerebral physiology, without at any time intimating how much of it was due to another. It is therefore under these circumstances that Dr Laycock has thought it right to set forth the origin and progress of the doctrines expounded in this work, and to show that in not recognising Dr Carpenter's claims, he has done that able writer no injustice.

THE END.

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